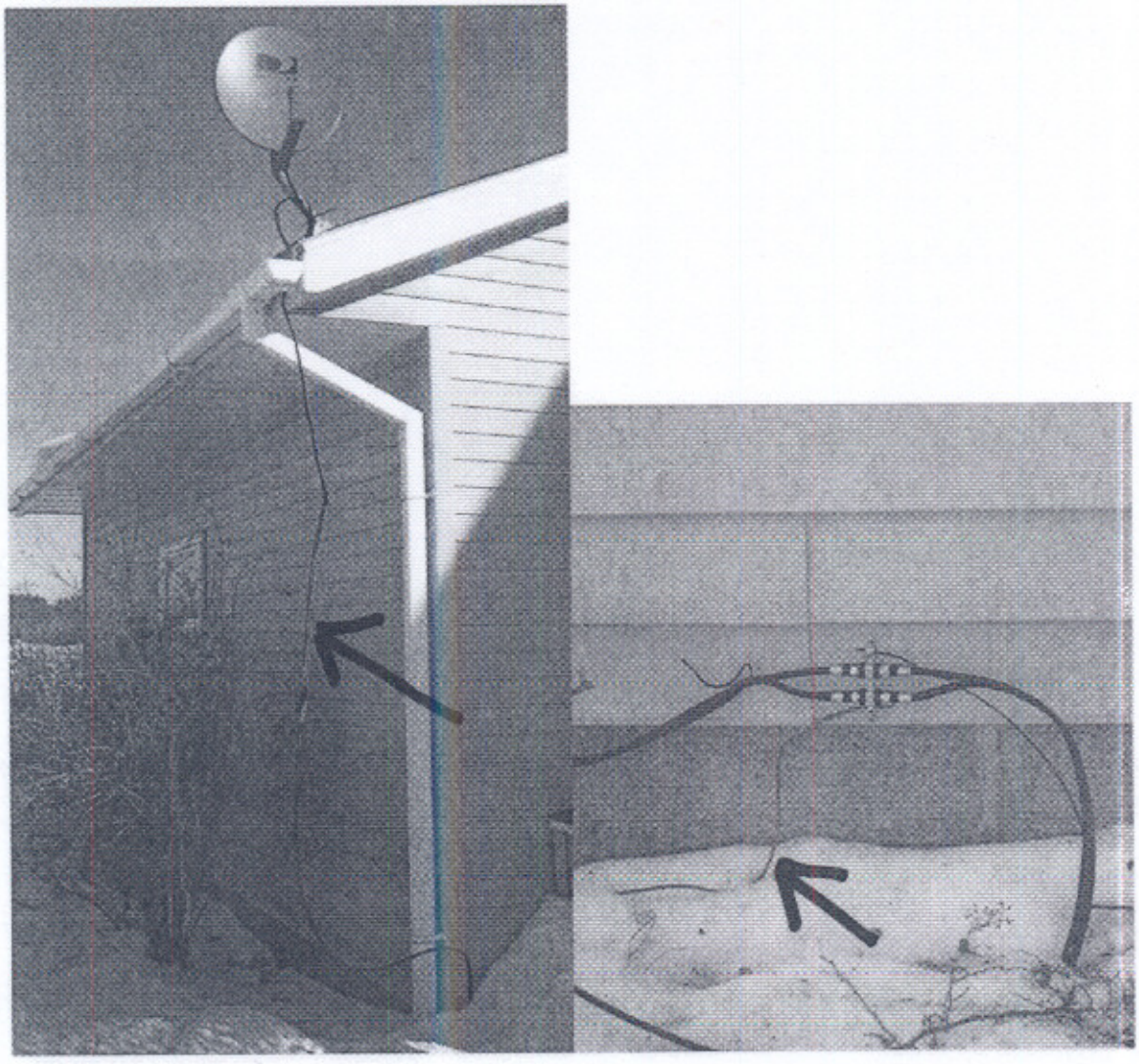
A random audit of recent satellite antenna system installations was made during the last week of January and the first week of February, 2009. These audits were randomly selected from a list of over 3,000 installations. The purpose of this audit was to verify compliance with applicable installation requirements of the National Electrical Code (NEC) as required by Minnesota Statutes, Section 326B.35. The most critical of the NEC requirements that apply to antenna installations, both community antenna television (cable tv) systems and satellite antenna systems, are the grounding requirements. Department staff conducted audits of 147 installations in various locations within the greater twin city metro area. These locations included those in the inner city and suburbs, as well as outlying communities. Of the 147 systems that were audited, 97, or 66% included significant code violations, primarily lack of grounding or improper grounding. The attached pictures taken during the audit illustrate typical violations.

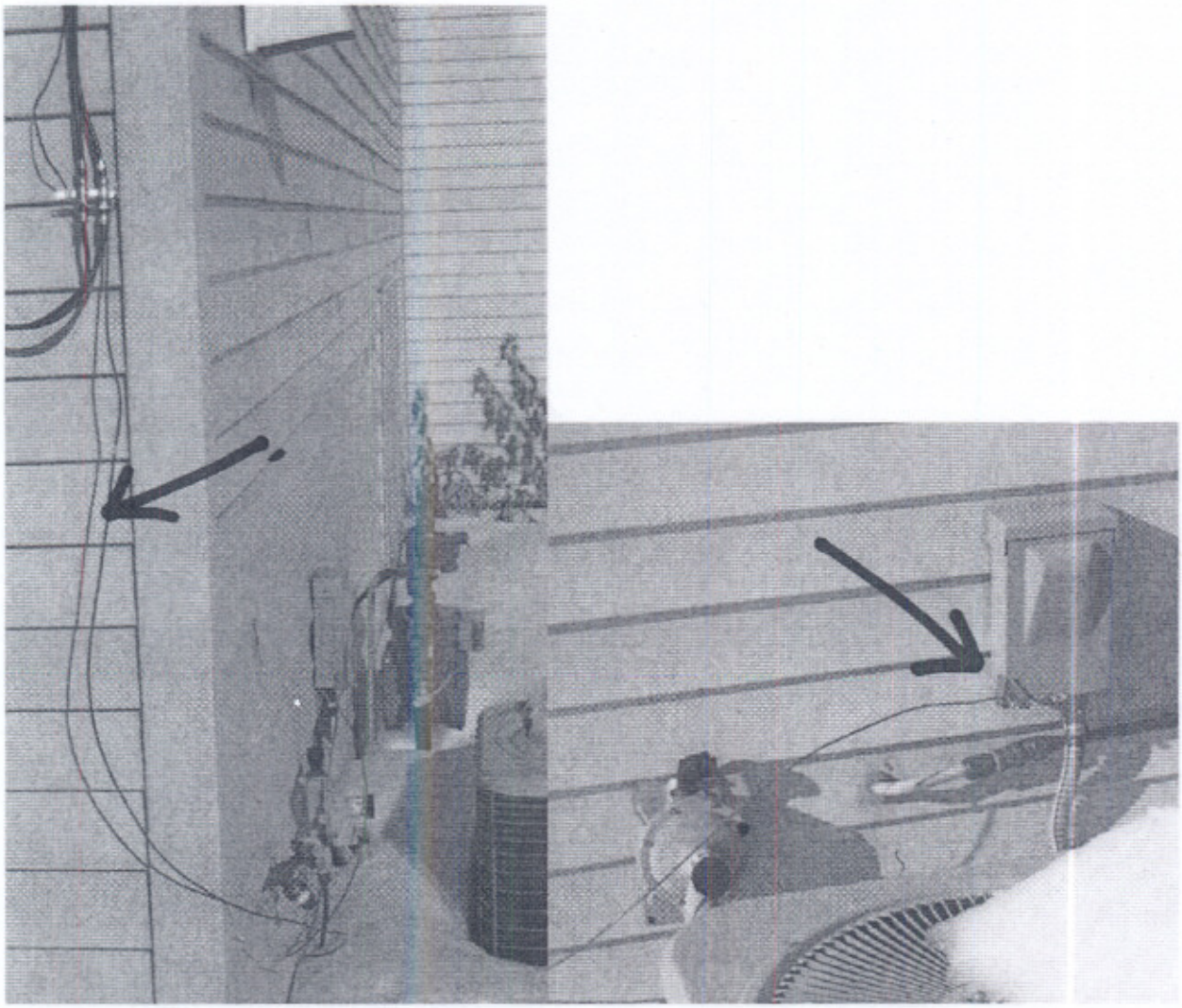
Individuals that perform antenna system wiring are not required to be individually licensed, but are required to be employees of a licensed contractor and registered if not licensed. Based on comments and input from individuals that are associated with the technology system industry, the Board believes that most, it not all of the antenna system work is performed by unlicensed individuals.

The high percentage of code violation clearly demonstrates that individuals performing the installations that were audited and found to not be in compliance with the NEC have limited understanding of applicable NEC requirements. The Board believes that requiring continuing education for these individuals will ensure that they have adequate knowledge and understanding of NEC and other installation requirements.



Cable not secured to the structure.

#10 AWG grounding conductor not secured to the surface.

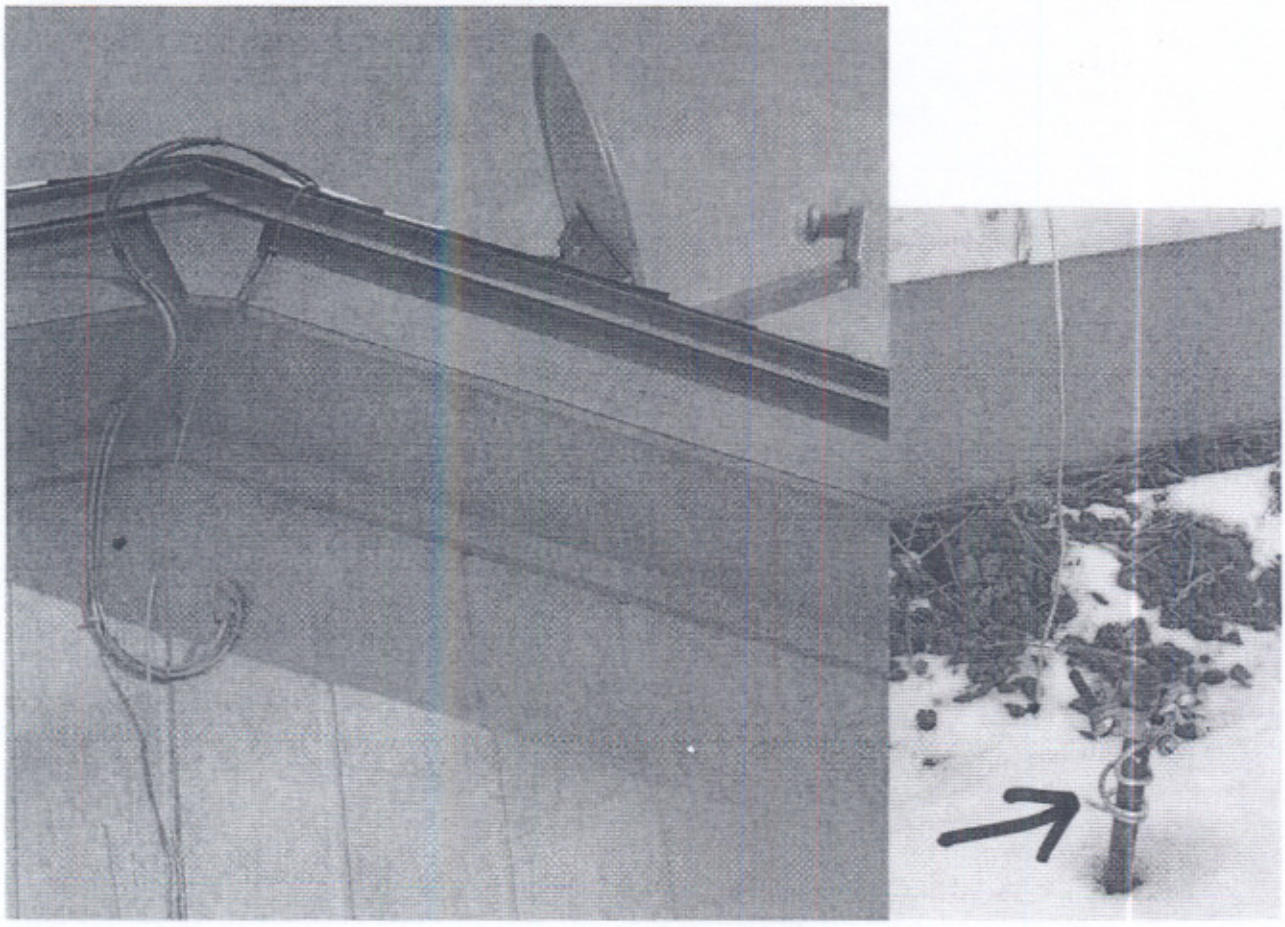


Grounding block not secured to the structure.

#10 AWG not secured to the structure.

System bonded to the A/C disconnect cover.

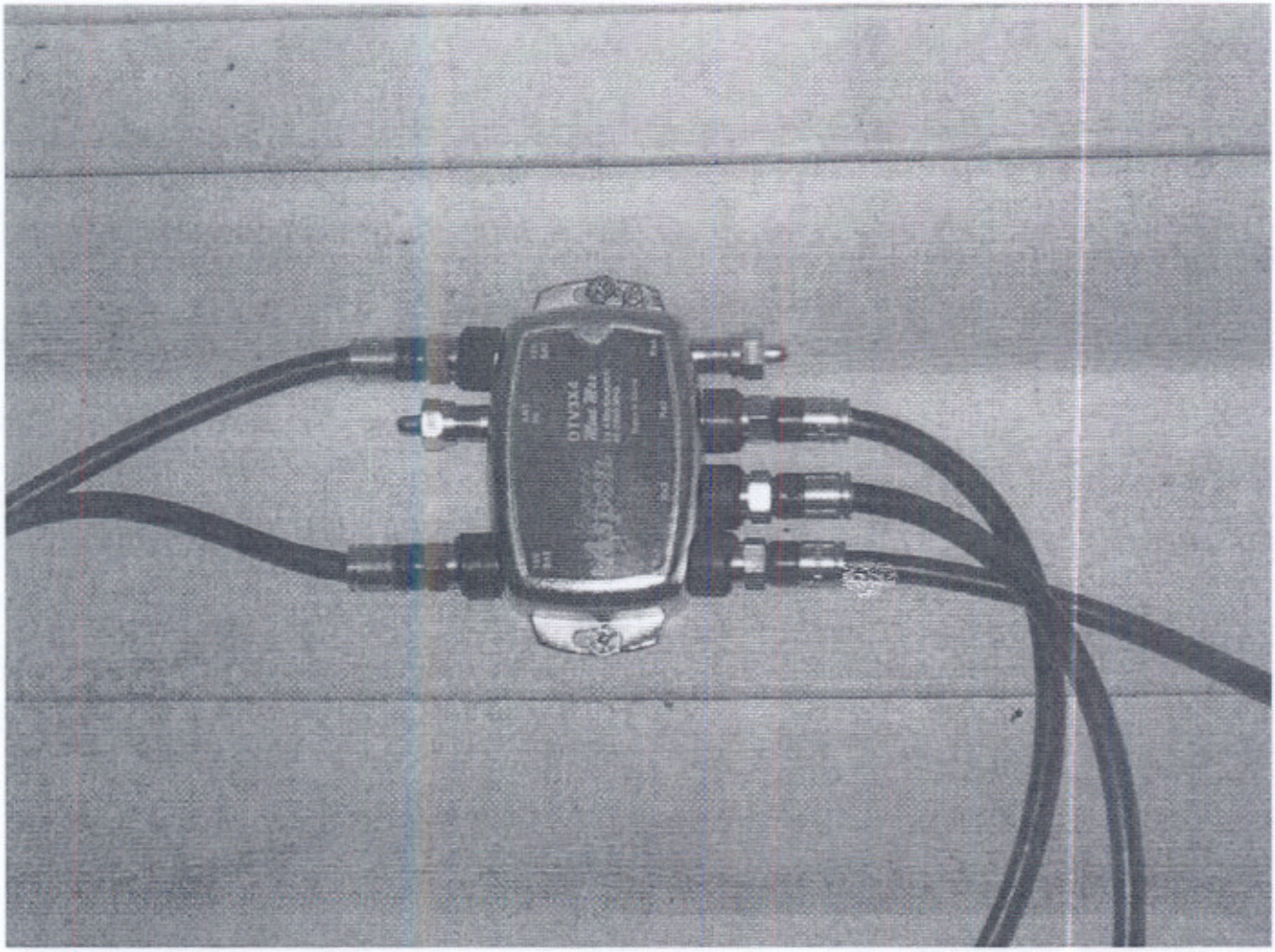
Mike Theisen, Electrical Area Rep



#10 AWG Aluminum grounding conductor runs from the Dish on the roof to a ground rod. The connection is within 18 inches of the earth, and the rod is not part of the grounding electrode system for the building.

The cables entering the building may not have the cable sheath grounded. Could not gain entry to the building to make a determination.

Mike Theisen, Electrical Area Rep

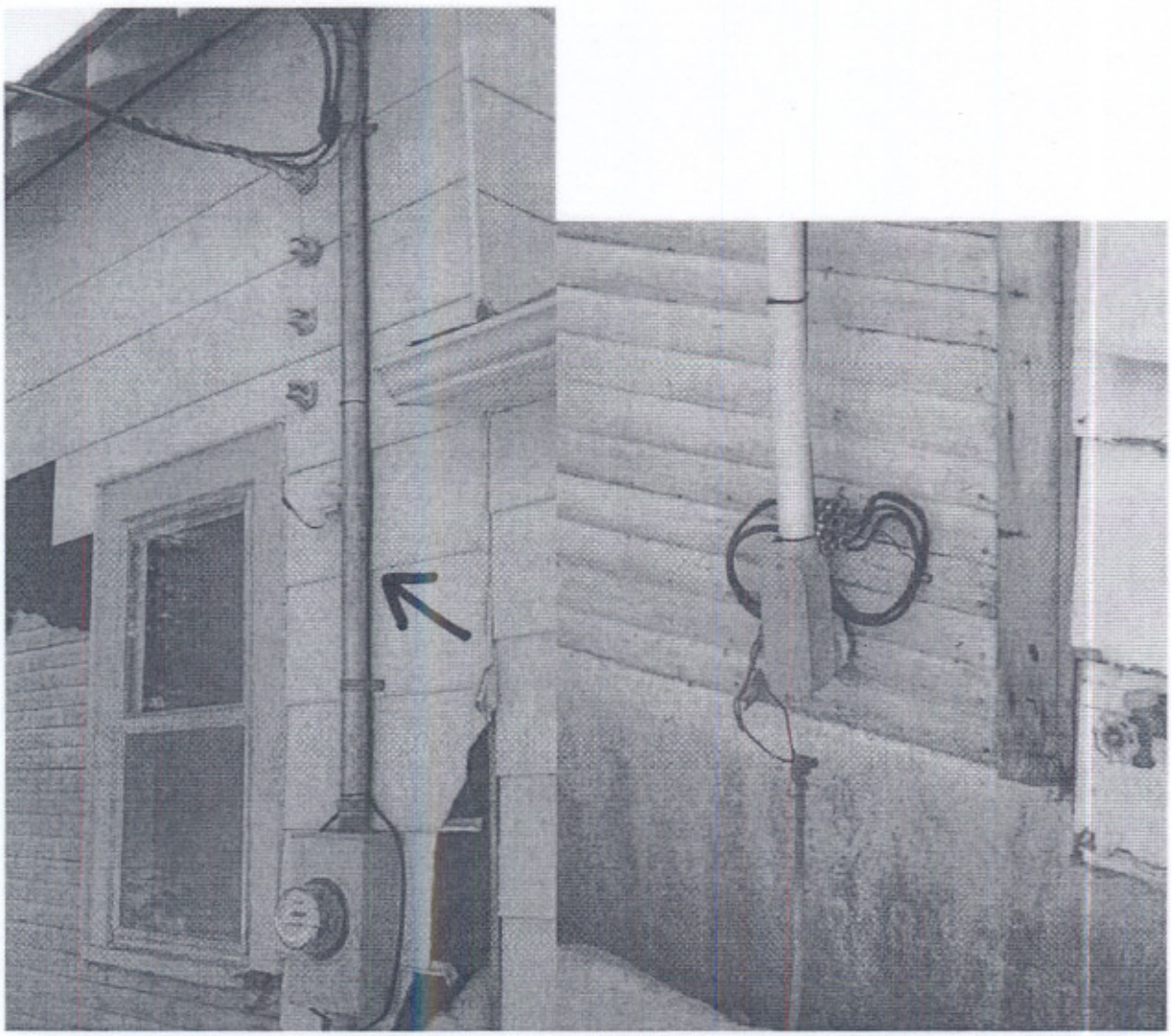


Eagle Aspen DTV3X4 Mini Max 3 x 4 Multiswitch is not listed.

The cable is not gounded.

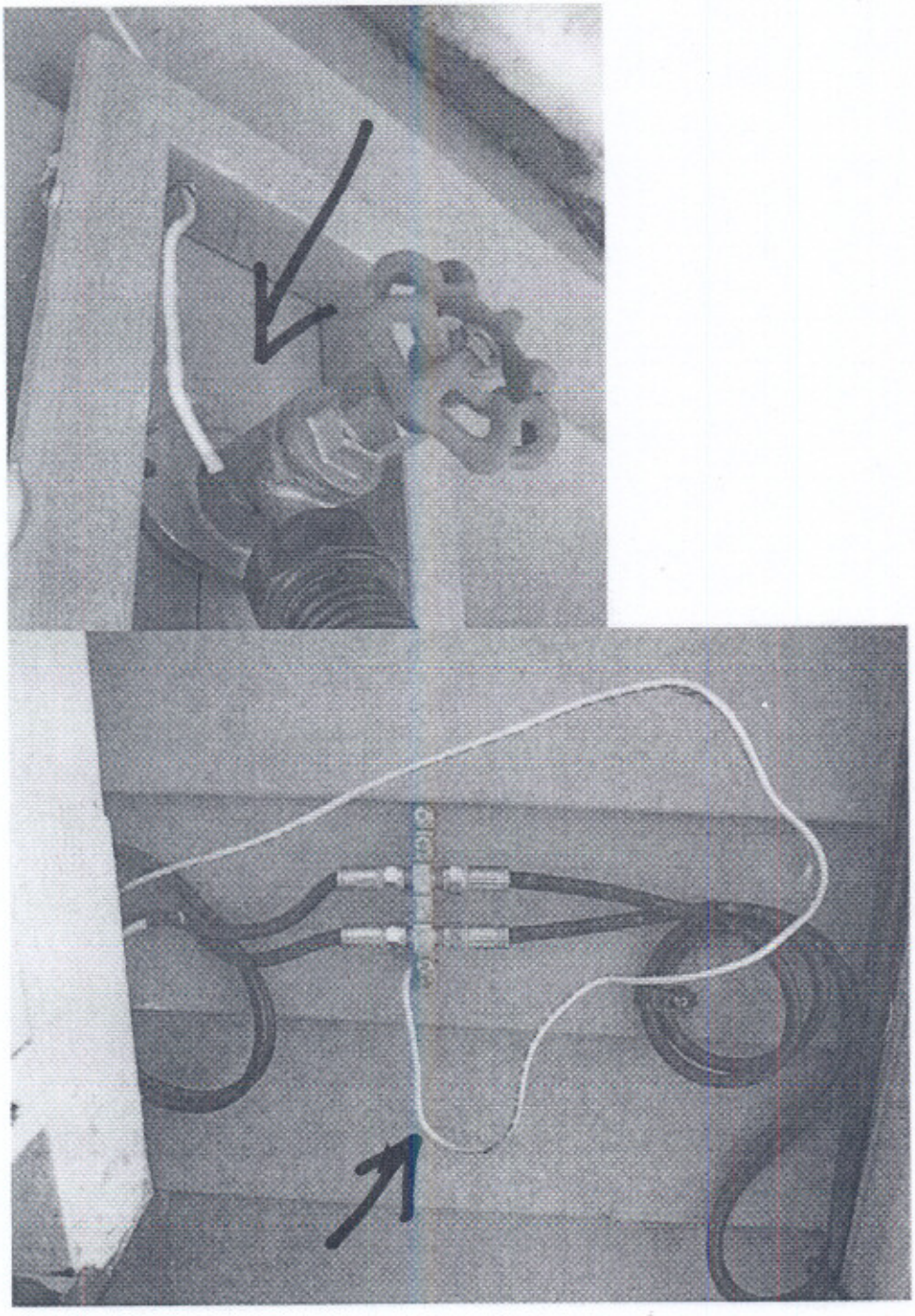
Cables are not secured to the surface.

Mike Theisen, Electrical Area Rep



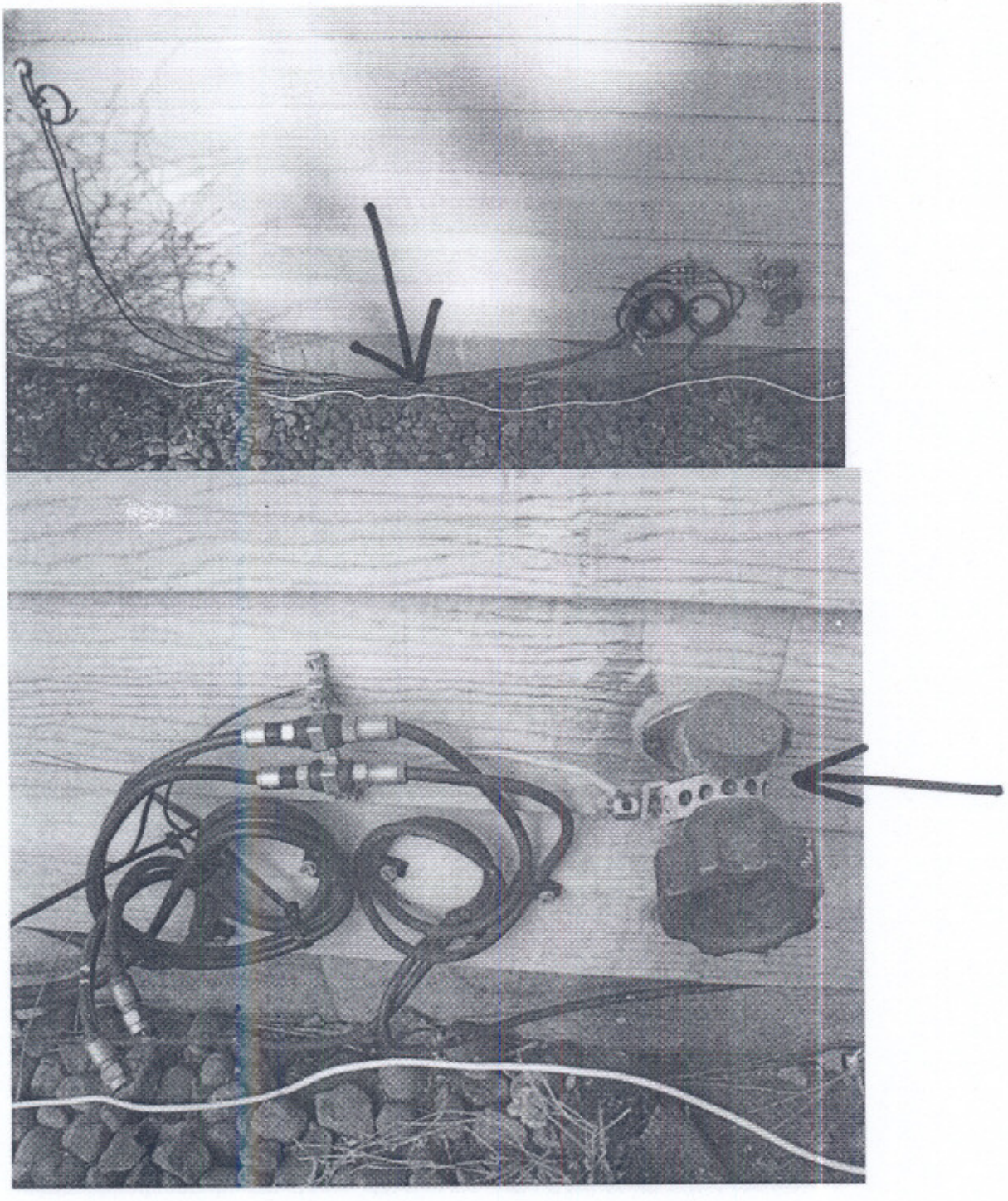
Cable is located behind the service mast and is secured to the mast.

Mike Theisen, Electrical Area Rep



#12 AWG grounding conductor is not protected and is not connected to any electrode.

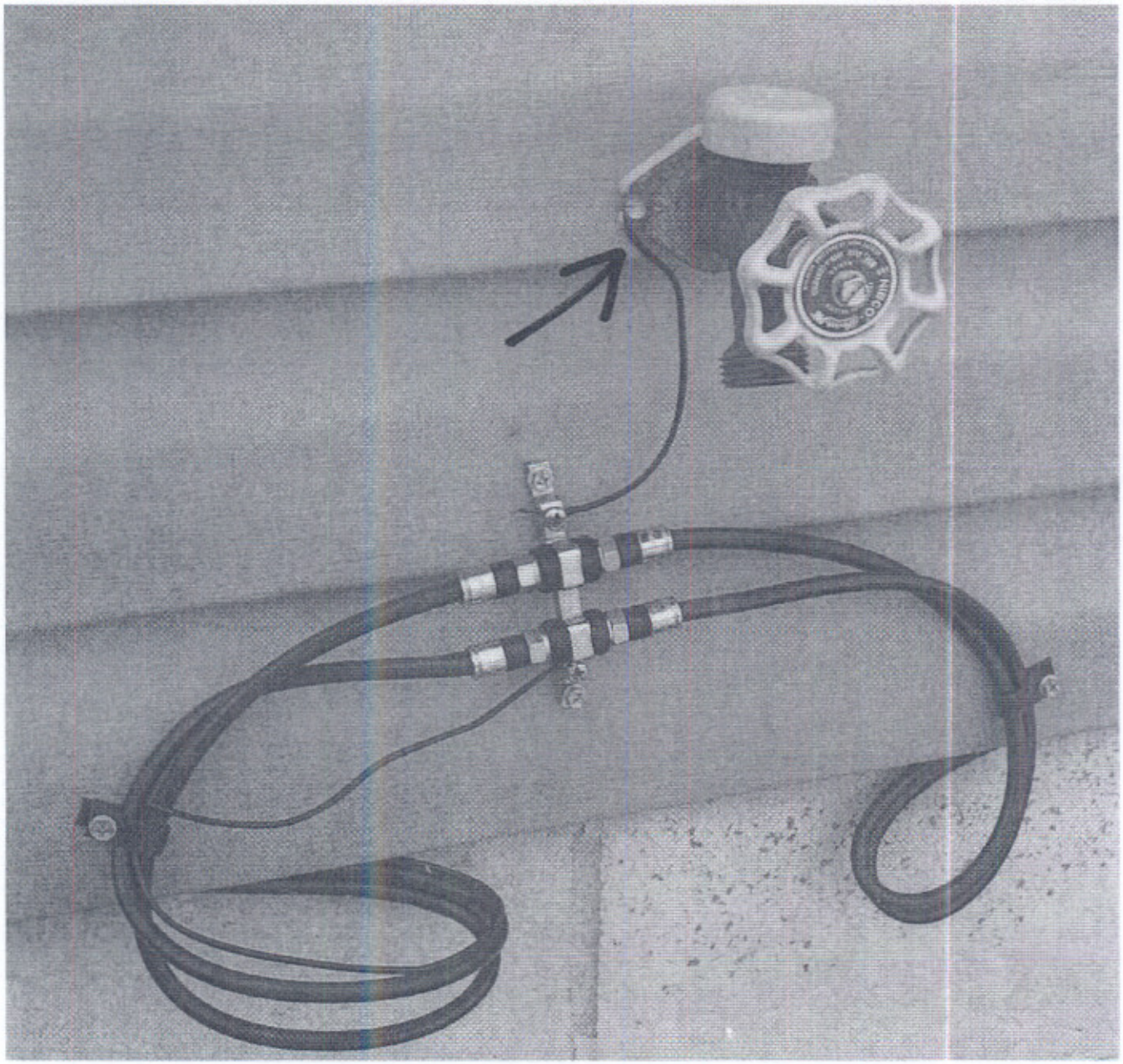
Mike Theisen, Electrical Area Rep



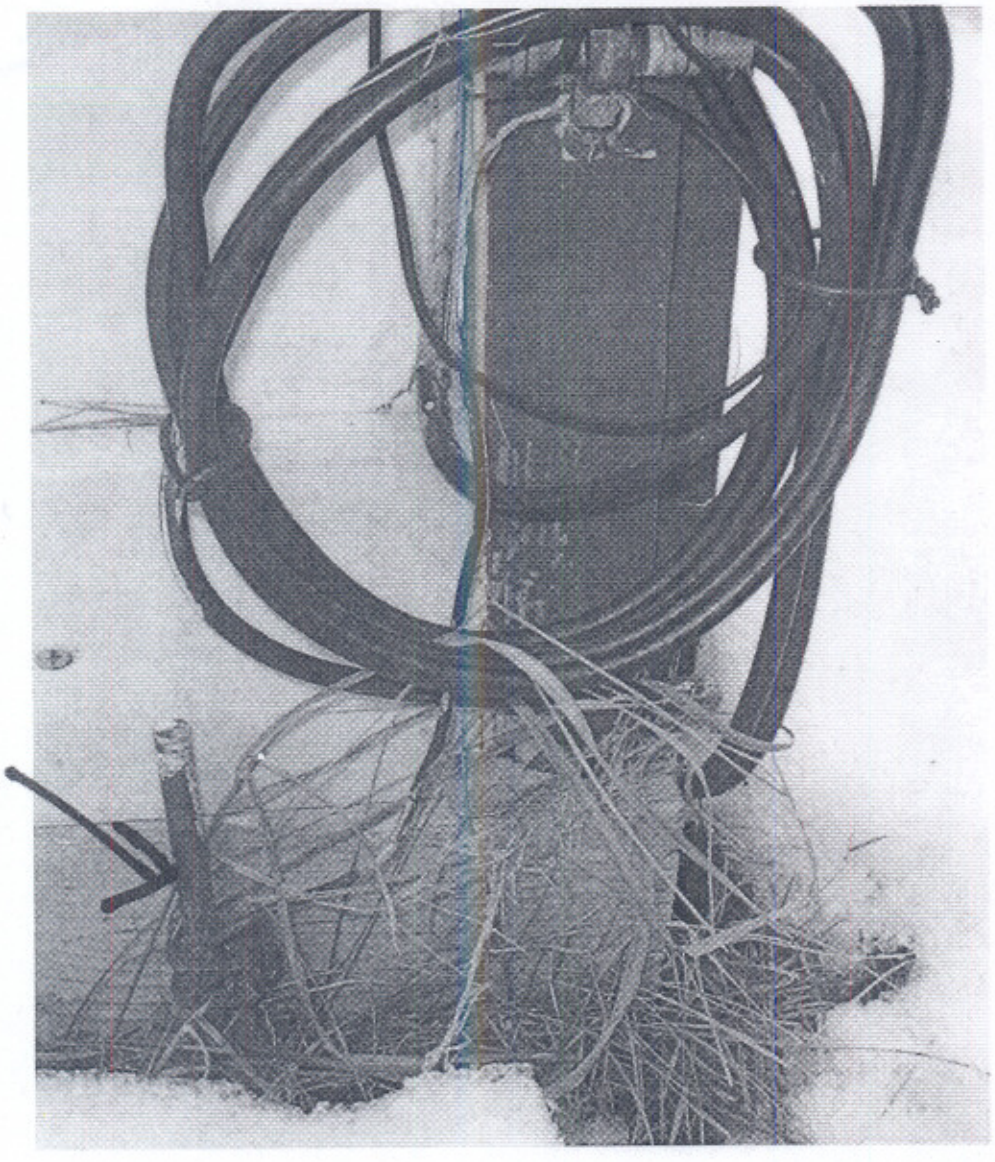
Cables lying on the ground and not secured to the structure.

Cable shield is improperly bonding to the water faucet and the clamp is not listed for the purpose.

Mike Theisen, Electrical Area Rep



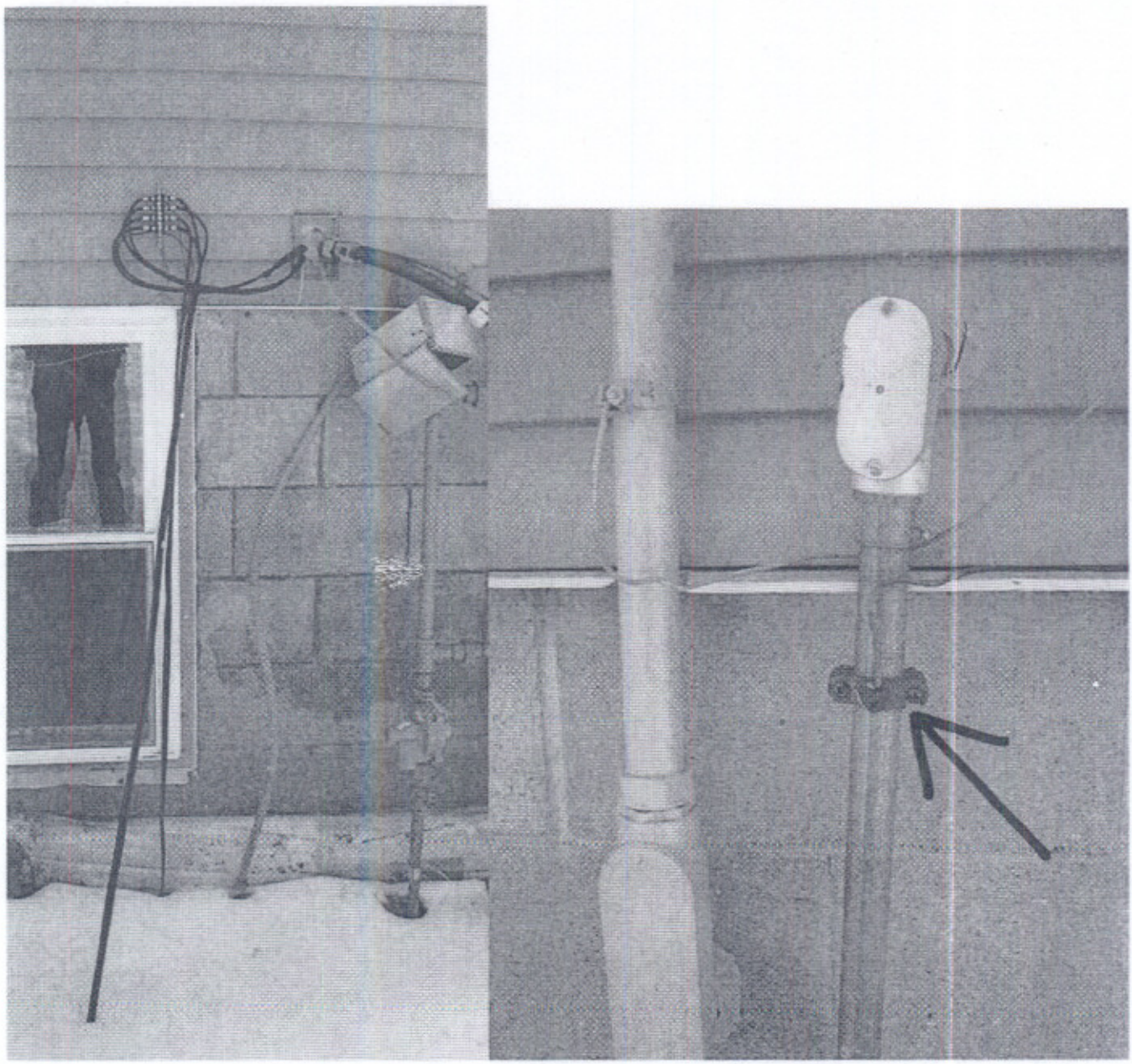
#17 AWG conductor used to bond cable to the mounting screw on the outside water faucet.



#14 AWG conductor used to connect the ground block for the cable to a 3/8" rod.

3/8" ground rod is not connected to the service or grounding electrode system for the building.

Mike Theisen, Electrical Area Rep

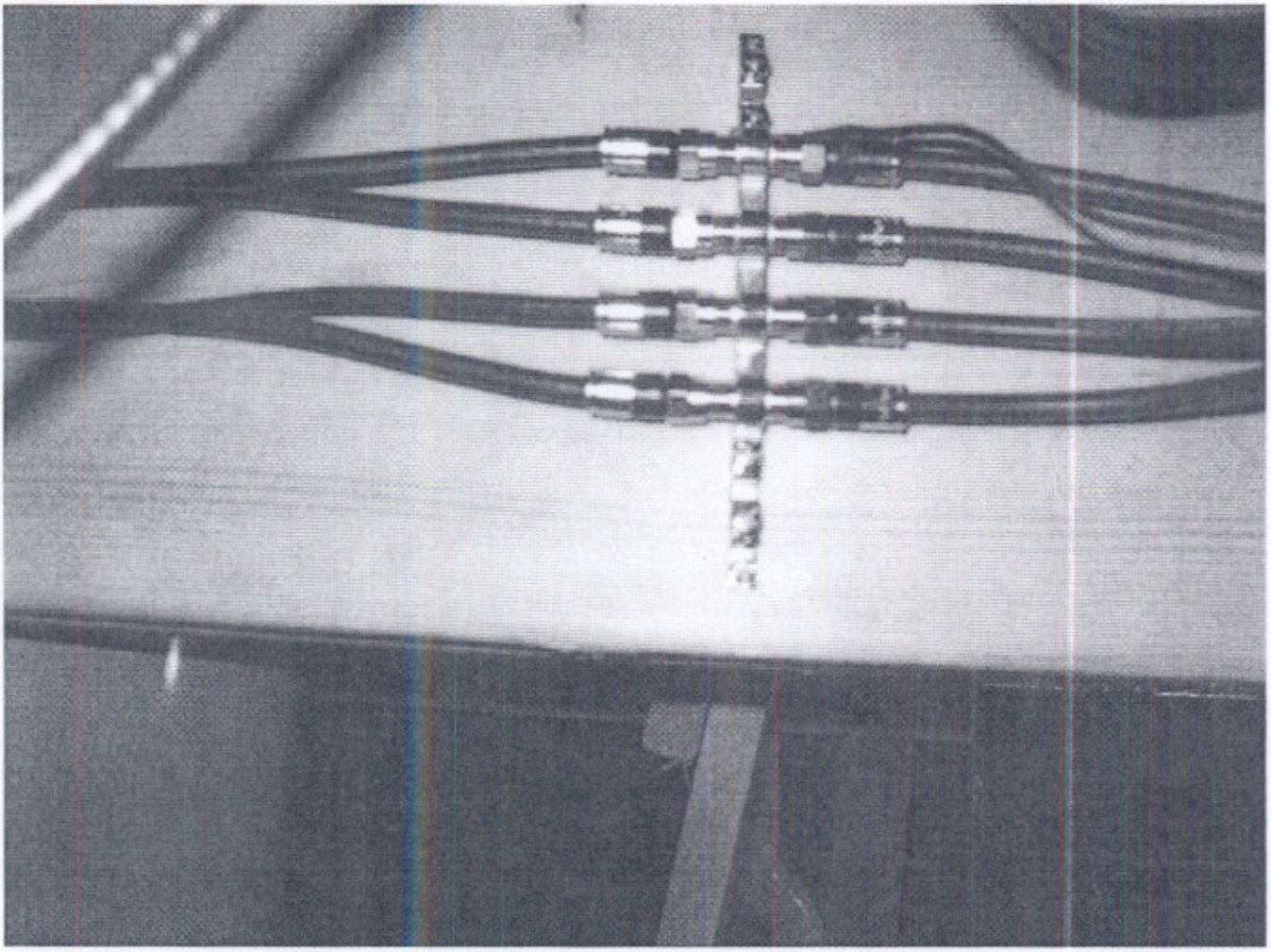


Dish is free standing in the yard approximately 50 feet from the building. The cable is lying on top of the ground. The snow was too deep to determine how the dish is grounded.

Cable is not secured to the structure.

#10 AWG grounding conductor is connected to the EMT of a feeder to an out building, not the service entrance conduit, which is adjacent to the EMT that is being used as the electrode connection for the cable grounding.

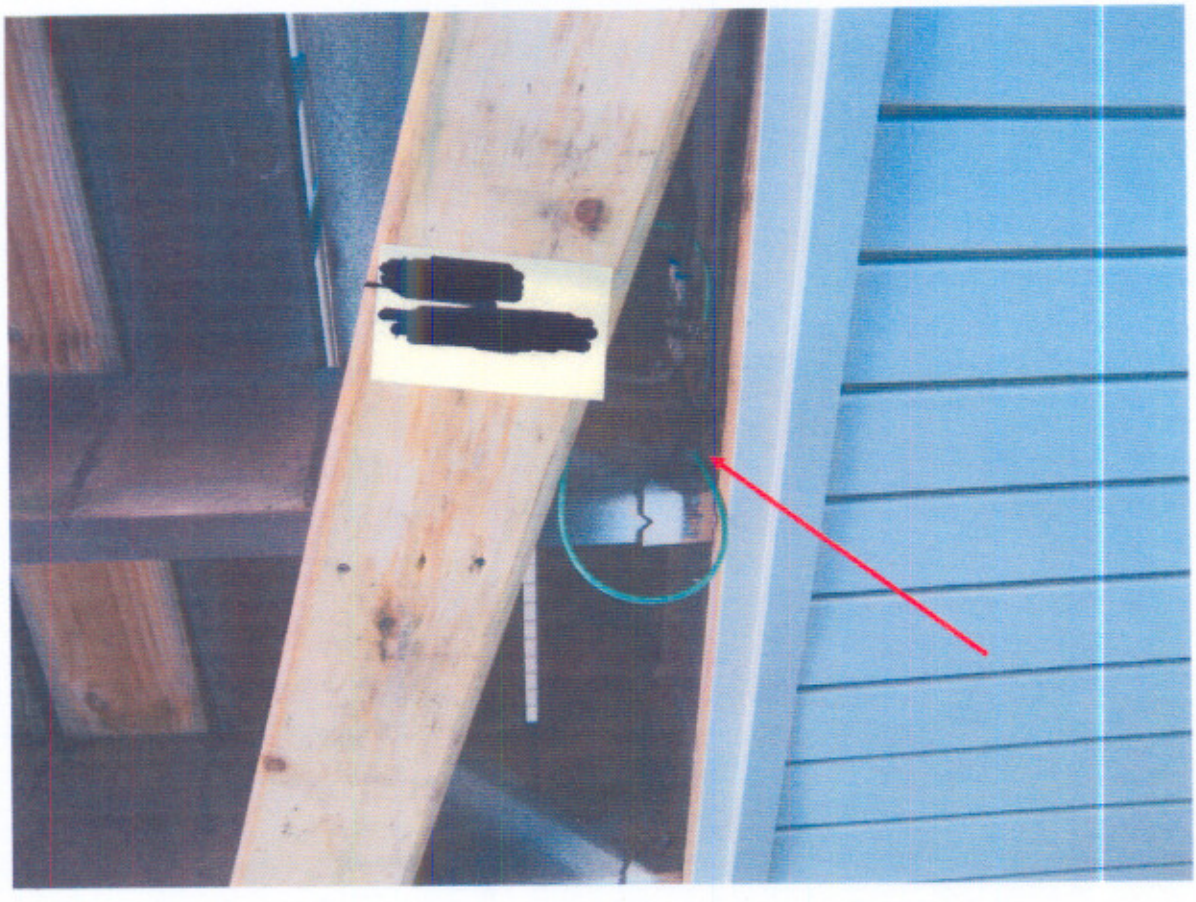
Mike Theisen, Electrical Area Rep



Cable sheath is not grounded to the grounding electrode system in the building.

The cable grounding terminal is located approximately 15 feet inside the building (not at the closest point of entry).

Satellite Dish Installation Audit
Distr 2



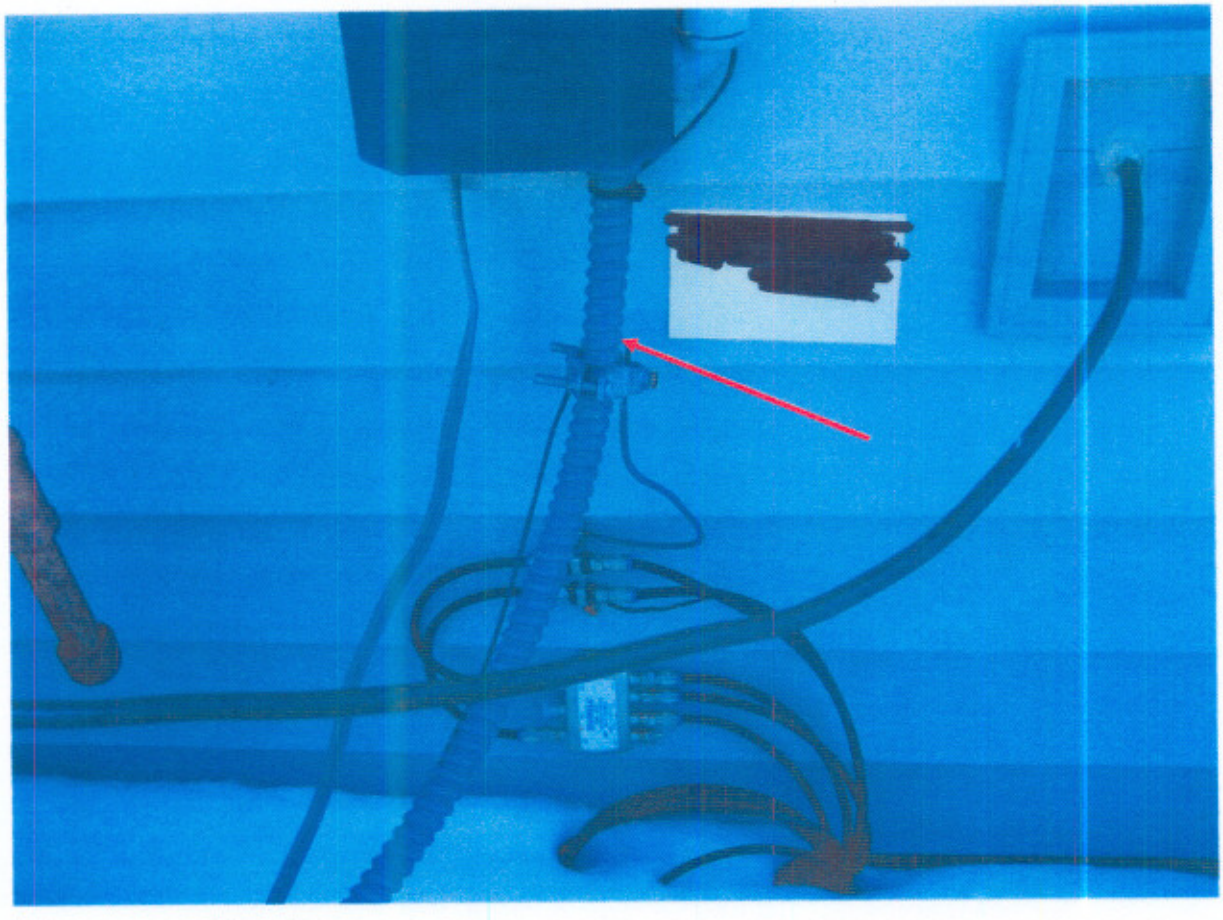
Non-compliant:

NEC 810.21(F) The deck truss support bracket is not an approved Grounding Electrode.

NEC 810.21(C) The grounding conductor is dangling loose off the antenna discharge unit.

[redacted]

Satellite Dish Installation Audit
Distr 2



Non-compliant:

NEC 810.21(F) This use of ½" flexible conduit supplying the A/C condenser unit supplied from a plastic disconnect box is not an approved Grounding Electrode. Two bolt Clamp is alloy and may not be approved for outdoor use.

NEC 110.12 This installation is installed in a marginal manner where the lead in cables are subject to physical damage at grade where subject to being hit by lawn and garden tools or equipment.

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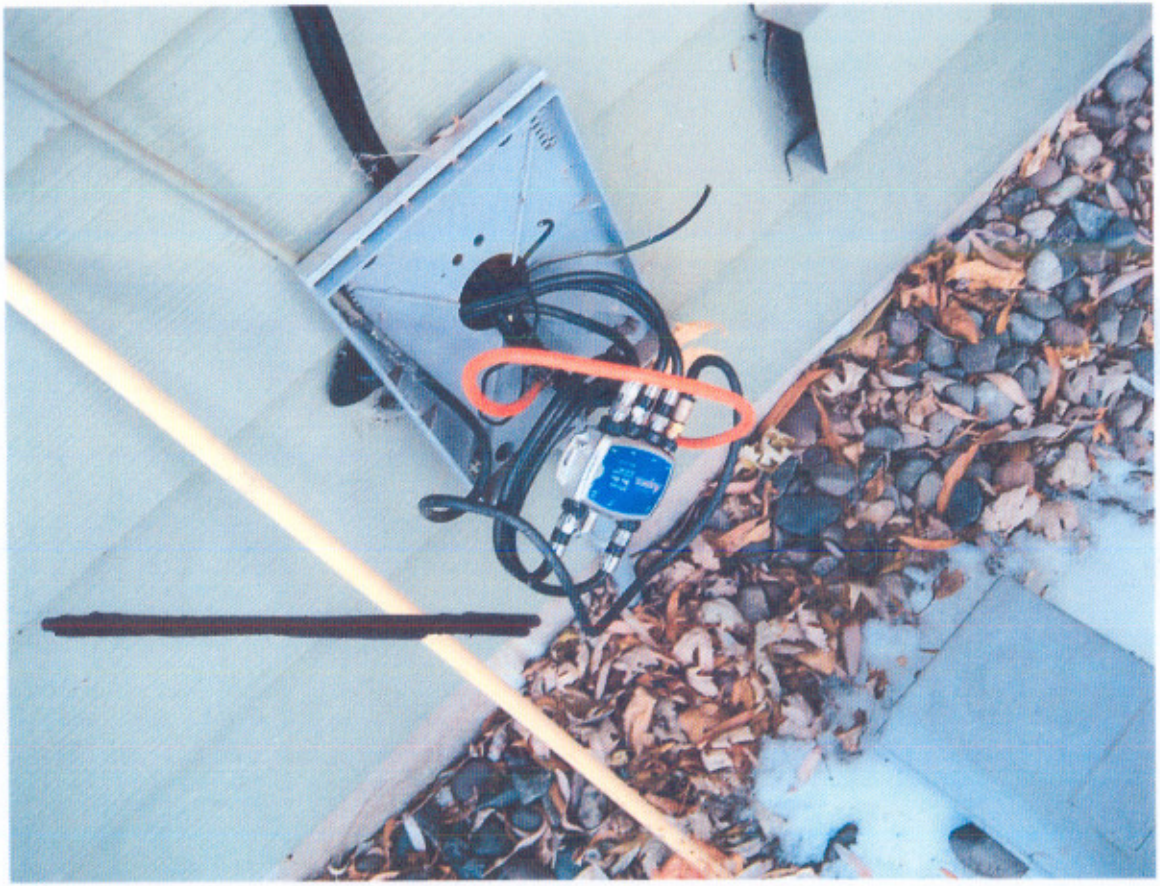
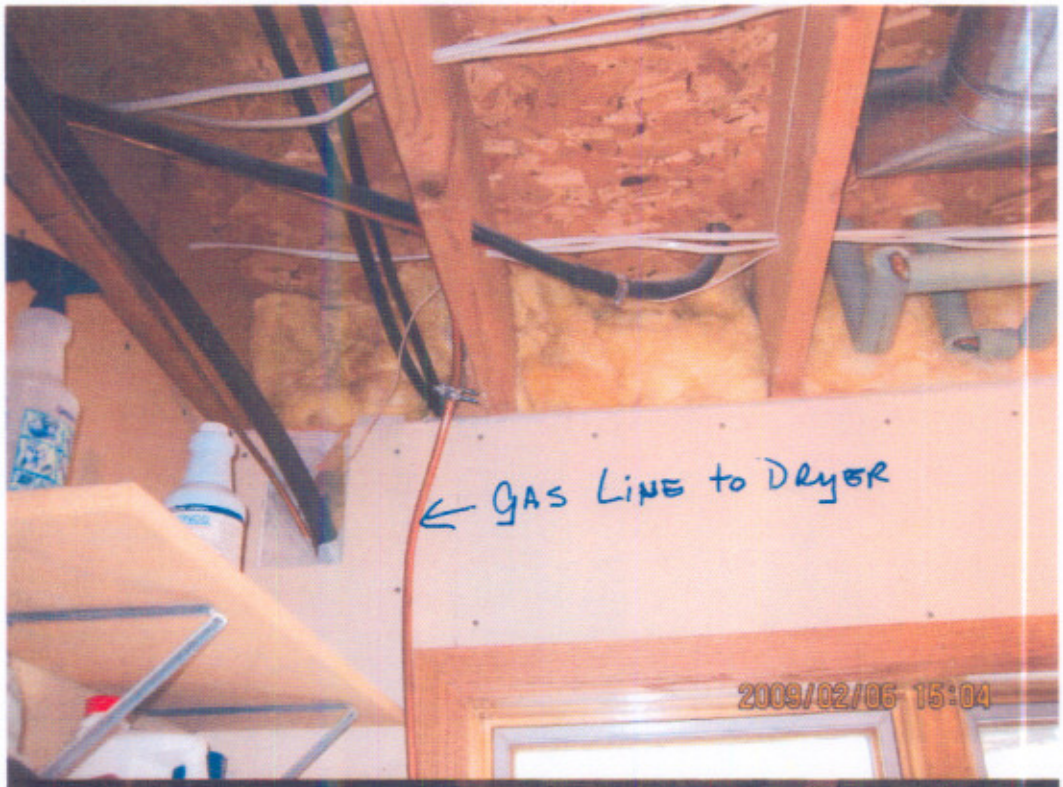
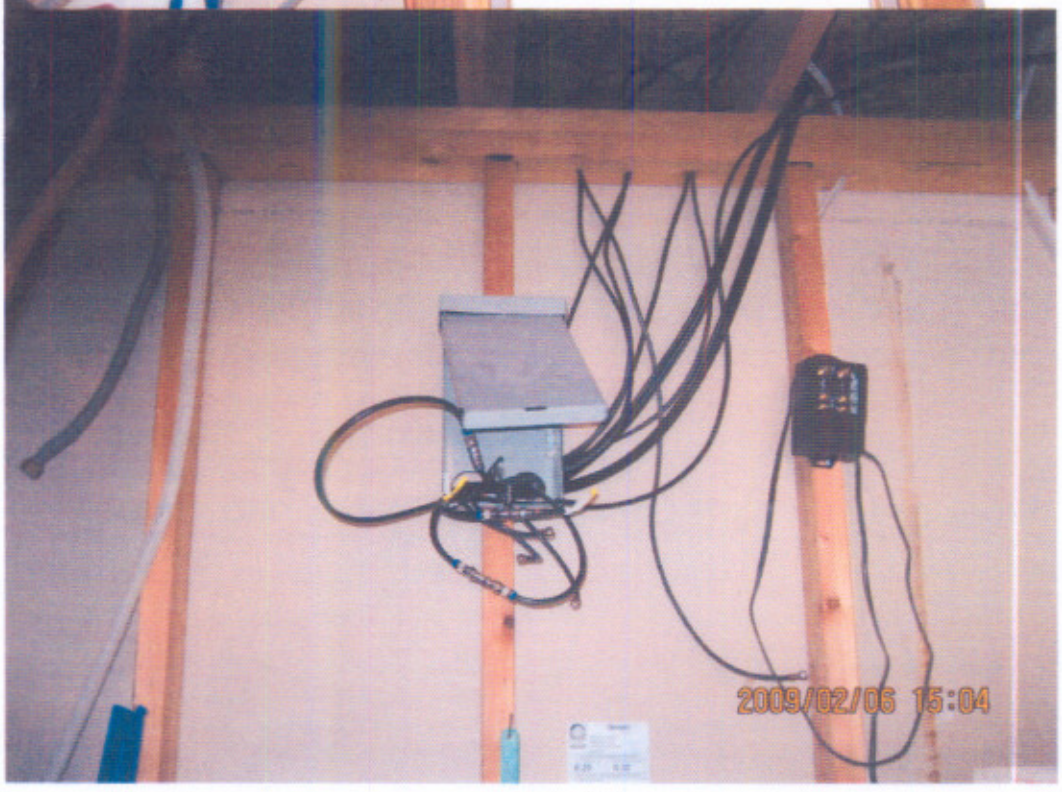
[redacted]

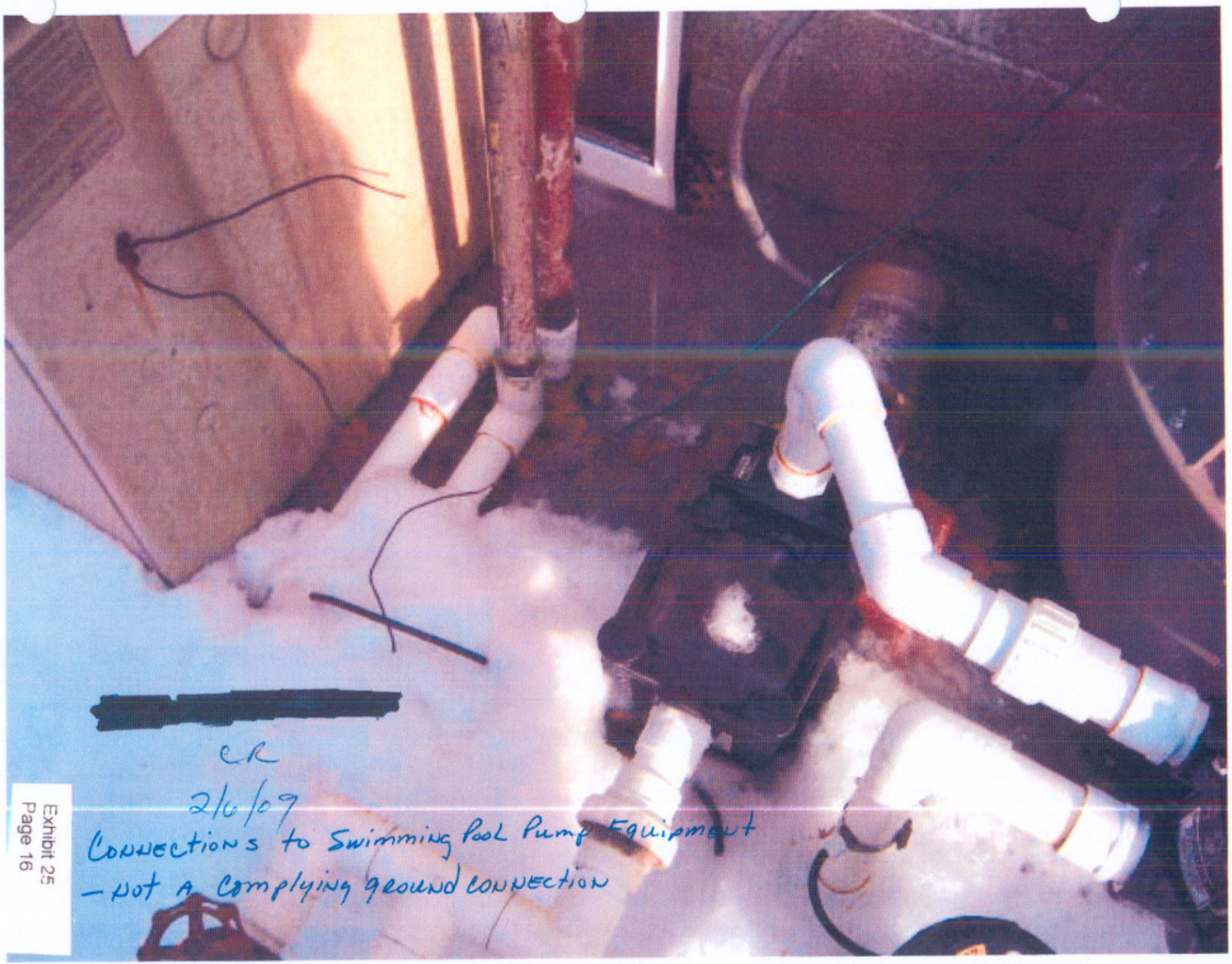


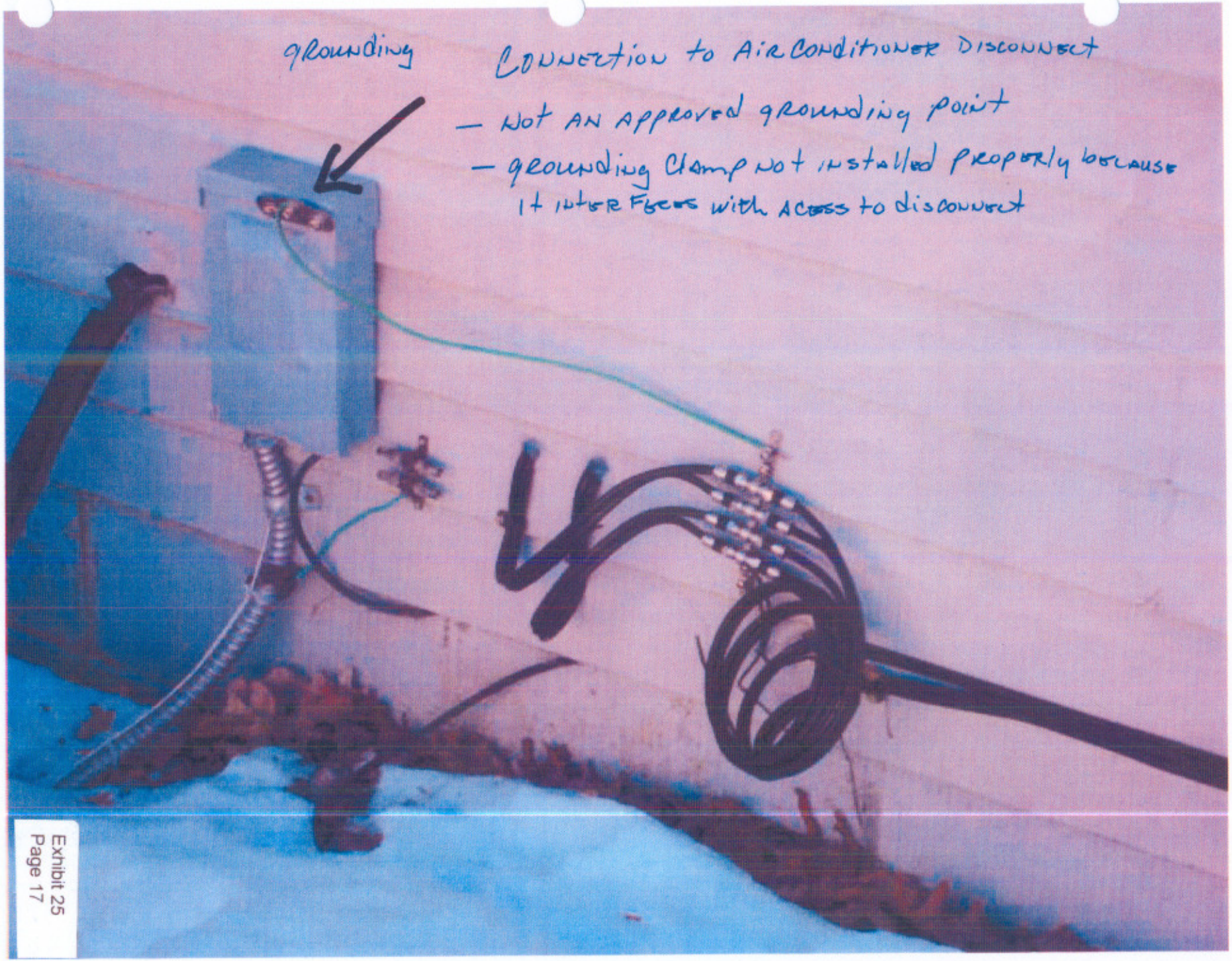
NEW SATELLITE ANTENNA INSTALLATION UTILIZING EXISTING CABLE TELEVICION BOX

— NO GROUNDING CONNECTION AT CABLE BOX


← GAS LINE to DRYER
2009/02/06 15:04


2009/02/06 15:04

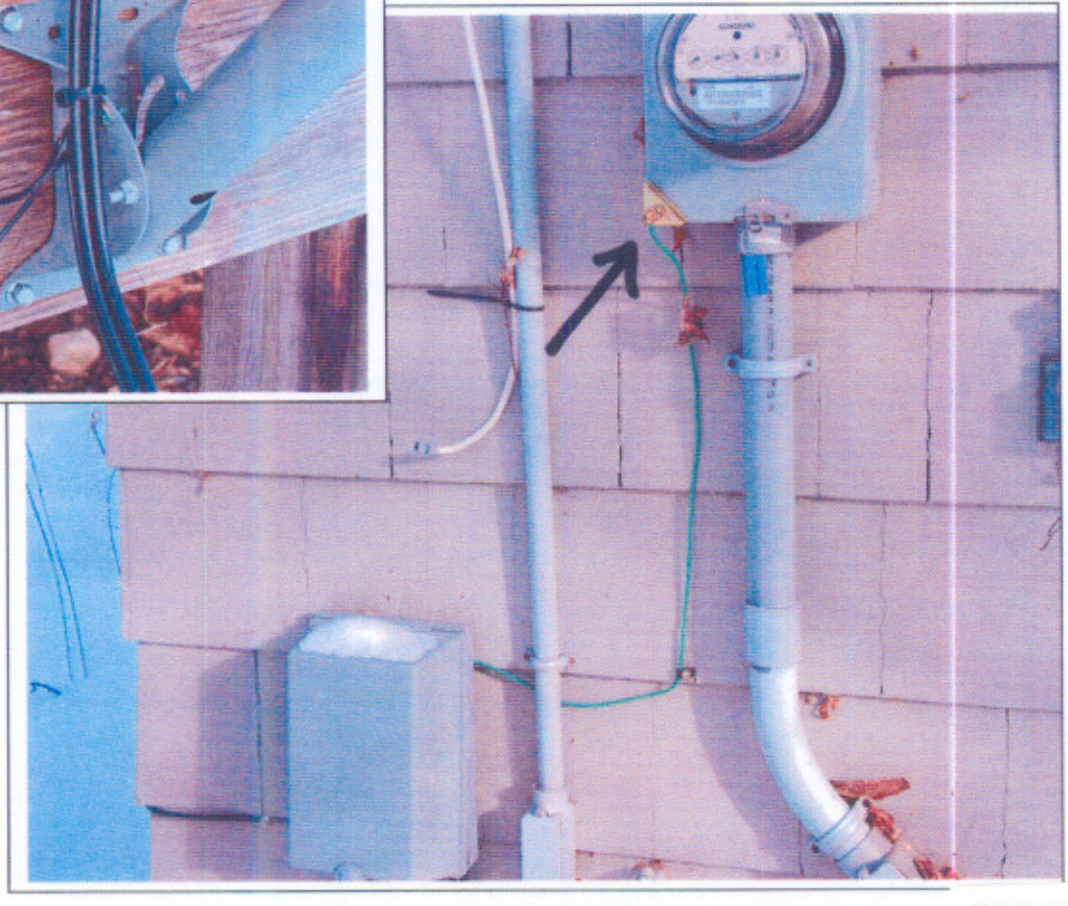

[redacted]
CR
2/6/09
Connections to Swimming Pool Pump Equipment
- not a complying ground connection

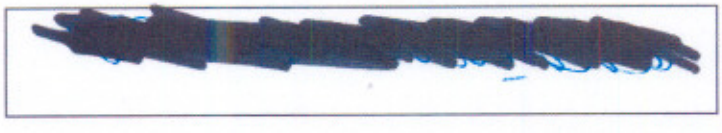

grounding
Connection to Air Conditioner Disconnect
– Not an approved grounding point
– grounding clamp not installed properly because it interferes with access to disconnect

[redacted]

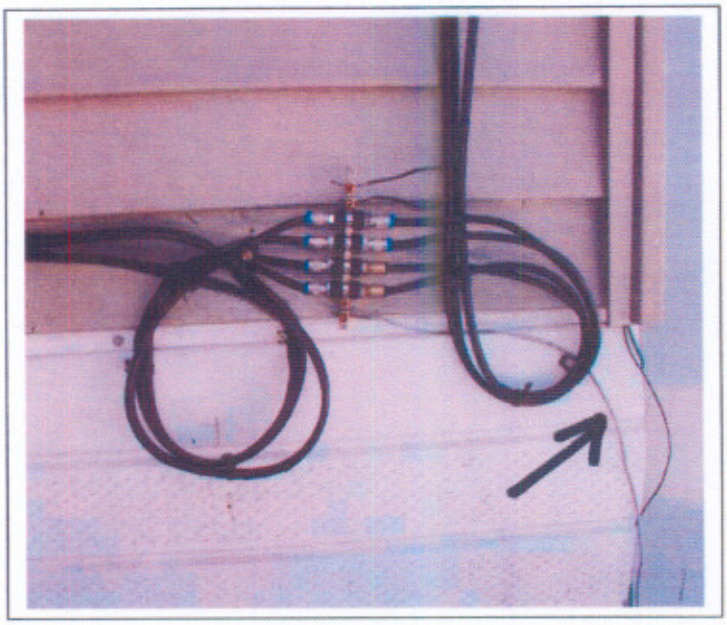
- Corner clamp on meter enclosure cover- service conduit is non-metallic

810.21(F)



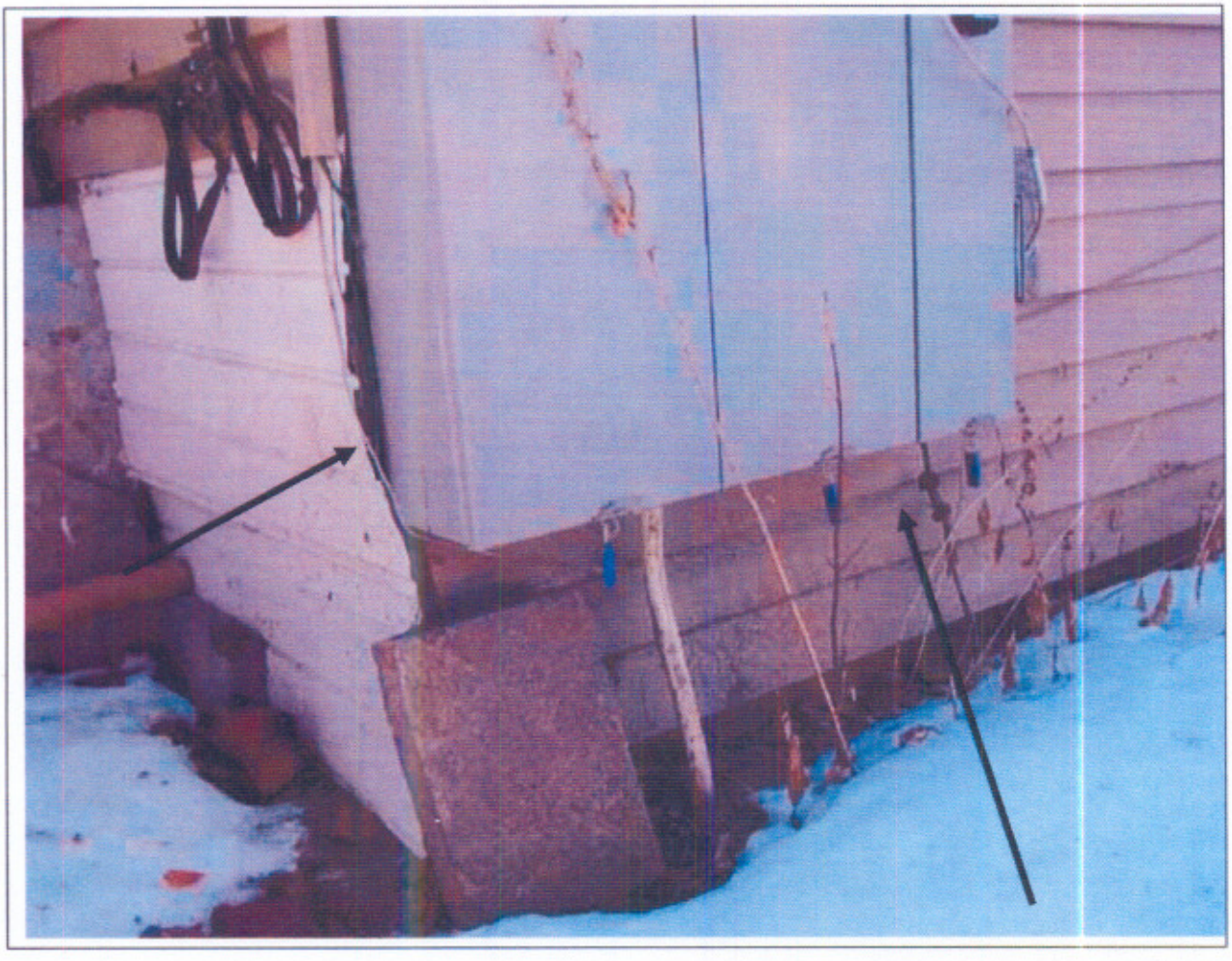


No grounding connection to Dish



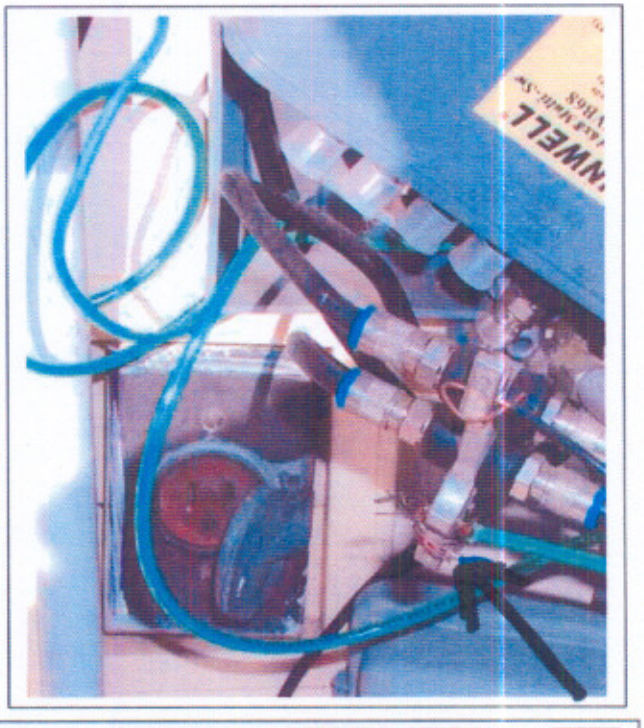
[redacted]

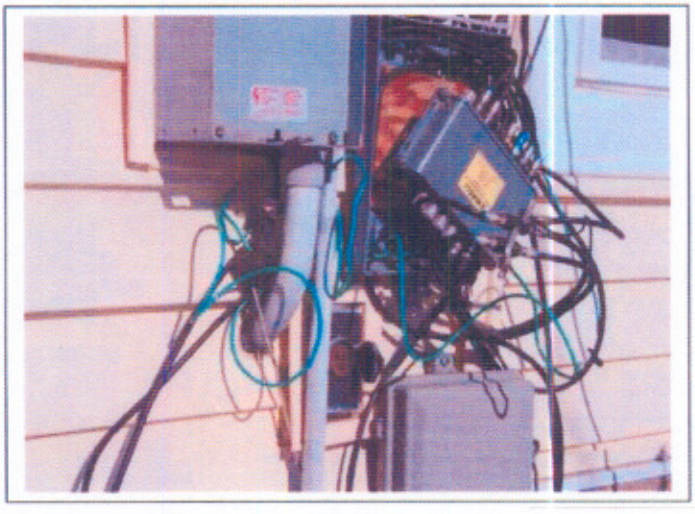
Aluminum # 10 Conductor
Installed within 18 inches of ground



[redacted]

- 4-foot coil of stranded #10
- Wrapped around telephone company grounding electrode conductor at the split bolt connection





#10 Copper conductor
- Connected to hose bib
- Conductor wrapped counterclockwise